

United States Department of Agriculture
Bureau of Entomology and Plant Quarantine

PREVENTION OF INSECT DAMAGE TO WIND-THROWN TIMBER
IN THE NEW ENGLAND STATES

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One of the most serious problems in the salvage and subsequent utilization of the great quantities of storm-felled timber in the New England States will be the avoidance of insect damage. Full recognition of the character of the damage to be expected and careful planning of the salvage operations to forestall insect attack should make it possible to avoid serious losses insofar as it is physically and financially possible to carry out the necessary measures.

The purpose of this discussion is merely to point out the major sources of damage and principal methods of prevention of insect attack. The New Haven laboratory of the Bureau of Entomology and Plant Quarantine, Forest Insect Investigations Division, located at 56 Hillhouse Avenue, will have men available to make field contacts with the personnel carrying on the salvage work thus providing detailed advice for special situations as they arise.

I. Insect Problems in Connection With the Salvage
and Storage of Logs, Pulpwood, and Lumber

Types of insect damage.--All species of logs will be attacked by ambrosia beetles or pin-hole borers shortly after warm weather sets in if they are still exposed to insect attack. Freshly sawn lumber containing a high moisture content will also be attacked to some extent, particularly if the bark is left on the edges of the boards. These beetles make small holes, so-called pin holes, in the wood and also introduce blue stains. Both of these defects lower the grade of the lumber.

Coniferous logs with the bark on are attacked by bark beetles, which carry blue stains into the sapwood. These blue stains quickly permeate and darken the entire sapwood. Ash, hickory, and elm may also be attacked in favorable locations.

Coniferous logs with the bark on are also attacked by borers, which riddle the sapwood and may penetrate into the heartwood. Round-edged lumber of all kinds with the bark on will also be attacked to some extent the first

year and particularly the second and third years. Hickory and ash logs are sometimes badly attacked by wood borers, but other hardwoods are not likely to be seriously damaged.

Prompt utilization.--The old adage "An ounce of prevention is worth a pound of cure" is especially applicable to the prevention of insect attack to logs and lumber. Avoidance of insect damage by proper methods of salvage and handling of the lumber is far more practical and economical than attempting to use control measures after the insects have attacked. Fortunately, during the fall, winter, and spring there will be no insect activity, and until after warm weather sets in, about May 15 in the southern part of the storm belt and June 15 in the more northern sections, there will be no danger from insect attack. With a late season these dates can even be extended, and in the case of certain types of borers there is a longer safe period. It is, therefore, absolutely essential to have all the logs out of reach of the insects before the end of this safe period (May 15 to June 15), unless under special entomological inspection and advice. This is especially true of pine, spruce, fir, ash, oak, and hickory logs. With other hardwoods there is less danger except from ambrosia beetles.

Water storage.--Water storage in ponds or rivers offers the most satisfactory place of safety. High floating logs may be slightly attacked on the top side. If so, they can be sprayed with a fuel oil or crankcase oil carrying naphthalene at the rate of 3/4 pound per gallon. The crude naphthalene flakes go into solution most readily when the oil is warm, 90° F. The flakes will not make a complete solution when cold oil is used. It is very important to avoid placing the logs in ponds or rivers that will dry up during the summer, thus exposing the logs to insect attack during the vulnerable period. Water storage tends to darken some woods after they have been in the water 6 months or a year.

Barking.--Barking is quite satisfactory to prevent borer and bark beetle attack and will prevent most of the ambrosia beetle damage if the logs are in a place where they can season rapidly. On the other hand, this rapid seasoning increases checking and the resulting injury from this cause is sometimes worse than that from insects.

Decking logs.--Some measure of protection from insect attack can be obtained by decking the logs in compact piles, so as to keep the inner logs cool and moist. This is to be recommended only if the material will be sawn by midsummer. However, a constant watch should be kept for insect attack, and at the first evidence of infestation as indicated by boring dust the logs should be sawn or placed in water. No sprays are known which will effectively prevent insect attack on decked logs.

Sawn lumber.--Probably the most satisfactory method of salvaging logs to prevent insect attack is to saw the logs into lumber and then properly pile or store the lumber. Proper piling to prevent insect attack to green lumber requires that the piles be raised from the ground on piers and the boards be separated and well spaced with stickers, so as to permit as much air circulation as possible. The piles themselves should be set apart to provide good air circulation.

It is far more satisfactory to remove all the bark from the edges of the lumber, but if not practical with lumber from small logs, this material should be piled separately and inspected several times during the summer season for evidence of insect attack. Such material is more subject to attack during the second and third years.

In the more southern sections of the storm belt, ash, oak, and hickory lumber, when thoroughly air-dried, may be subject to attack by the powder-post beetles (Lycus species). This damage is not likely to occur until the second summer or later. There are no practical means of avoiding such damage other than frequent inspections for evidences of attack and prompt utilization. Kiln-drying the infested material will kill the insects but will not prevent reinestation.

II. Insect Problems in Connection with the Protection of the Remaining Standing Timber

Spruce bark beetle.--In some sections where considerable spruce has been wind-thrown, outbreaks of the spruce bark beetle may result during the second or third year if the logs are left in the woods. In those places where this material cannot be utilized, it should be inspected during the summer of 1939, and if found to be heavily infested by this bark beetle, the logs should be peeled in order to protect the surrounding green timber.

The pales weevil will become very abundant in white pine areas because of its habit of breeding in cull logs and stumps. The adult beetles cause much damage by feeding upon tender bark, often girdling or even completely stripping the bark from young trees. Young reproduction from 6 inches to 2 feet high may be entirely killed over considerable areas. Little can be done to avoid this type of injury in windfall areas. In some cases it will be necessary to replant if seed trees are not available. This insect is likely to be very abundant for at least the next two or three years.

Tan bark.--There will probably be a demand for the salvage and storage of hemlock and oak tan bark. Several borers attack this bark after the second and third years. Inspection and prompt utilization of infested material should be provided for.

Elm logs and slash.--In those parts of the area where the Dutch elm disease or the European elm bark beetle is now present every effort should be made to destroy or utilize all elm windfall material over 2 inches in diameter before the coming summer. If this material is not destroyed, it will serve as a breeding ground for elm bark beetles and thus increase the danger of spreading the disease among the living trees remaining in the area and to new areas.

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